

The use of cosmetic products during the time of women's transition to menopause



What is Menopause?

- A permanent pause in menstruation arises from a phase of natural hormonal changes in women known as menopause (climacteric). One of the most important stages in a woman's life is this one. When a woman goes an entire year without having a period, that is, when menopause is officially recognized.
- The age at menopause ranges from 45 years to 55 years.(1)
- This is a wholly organic and normal aspect of aging brought on by a reduction in estrogen. On rare occasions, medical or surgical procedures that lower estrogen levels might cause menopause. The beginning of the menopausal transition, which may be slow, is frequently signaled by changes in the menstrual cycle.

What is perimenopause?

- The time from when these symptoms are first noticed until one year after the last menstrual period is known as "perimenopause." One's physical, emotional, mental, and social health may be affected by perimenopause, which can last for years.(1)

What is the relationship between menopause and aging?

- Given the longer lifespan, women may now anticipate living for at least one-third of their lives after menopause.
- Understanding the physiology of menopause, aging, and potential management strategies is, therefore essential for the health of women.(2) Changes in fat, bone, and overall metabolism are brought on by menopause. These modifications affect the way the body looks, feels, and functions.
- All women have difficulties during this stage, whether they are moms who stay at home or professionals.(3)

Can menopause cause skin problems? What are the skincare concerns of women in this age group?

- Yes, these are potential skin changes that could happen during menopause.
 - Less supple skin;
 - Creepy texture;
 - Dullness or discoloration
 - More sensitive skin;
 - more breakouts;
 - Skin that doesn't recover as quickly as it once did
 - Rosacea-causing flushing;
 - adult acne flare-ups;
 - dry skin with more noticeable wrinkles;
 - Sunspots;
 - Red broken capillaries;
 - Dull skin with elasticity loss;
 - Skin sagging;

What is menopausal skin?

- Estrogen depletion significantly contributes to many changes your skin may undergo during menopause. Its quick fall affects the elasticity, texture, density, resilience, moisture, and suppleness of the skin, finally resulting in skin with a crêpe texture and losing its 'bounce' or elasticity.

- Surprisingly, during the first few years of menopause, collagen levels can drop by as much as 30%, resulting in thinner, weaker, and more sensitive skin and indicating environmental damage.
- The inescapable skin changes during this time are caused by decreased production of estrogen, progesterone, and testosterone and increased production of cortisol.(4)
- External signs of skin aging are caused by intricate, long-term processes occurring in it or by a decline in the biological activity of its cells. The skin becomes dry. Acne, facial hair, wrinkles, and sunburns are all rising.(5)
- Additionally, race and postmenopausal skin appearance seem related. Black women in a research from 2021 had better facial rigidity or lower wrinkle scores than white women four years after menopause.(6)
- It is advised to provide expert care in beauty salons and use carefully chosen cosmetics for home care to maintain the health of aging skin.(7)
- Thankfully, science has advanced significantly and can now offer practical advice on addressing these common skin issues. Here, we'll go over the fundamentals of what you need to know and what you can do, regardless of whether you're seeking preventive measures or strategies to deal with the menopausal skin troubles you're now experiencing.

What are the women's perceptions and beliefs of the value of cosmetic products and general skin care?

Perception of beautiful skin

- Beautiful skin develops as a distinguishing trait of attractiveness and prestige. It is no longer satisfying to think that healthy skin simply indicates that there are no underlying medical issues.(8)

Perception and beliefs of the value of cosmetic products

- As a result, there is a fast-growing market for skin care products and cosmetics that fight ageing, eliminate scars, and minimize wrinkles.(9) Women think that cosmetics are necessary to boost their confidence, look good at work, attract men, and many other things.

Perception and beliefs of the value of natural cosmetic products

- Since women with postgraduate degrees reported using cosmetic creams more frequently, spending more money on them, and being more aware of natural and ecologically friendly cosmetics, higher education had a major impact on the use of cosmetic creams.(10) Women who had children tended to favour using natural products more.

Do women view skincare as their support while entering menopause or once they have entered menopause?

Value of skin care in menopause

- Women are no longer willing to accept how their skin changes as they age and the natural aging process. The use of cosmetics items on one's own or in beauty salons is becoming increasingly popular.(7)
- The anti-aging cosmetics products provide menopausal women with the most assistance in restoring normal skin nutrition and moisturization, stimulating the production of fibroblasts, and facilitating cellular renewal and renovation.(Herman et al., 2013)
- Women with menopausal skin that lack estrogen seek aesthetic and medical therapies to alleviate their skin's problems, enhance their physical appearance, and slow aging.(6)

How do women entering menopause perceive the future? Do menopausal women have any uncertainties?

- Women endure mental and psychological issues around the menopause transition, which needs proper attention.
- Women going through menopause often have significant experiences, including fear of the future, its effects, and the urge to be confident about it. Women look to their families, peers, and healthcare professionals for solutions. It is advised that more research be done on how psychological therapies might be used to address these issues in postmenopausal women.(11)
- The study by Castiglione et al., 2014, investigated female representations of body physiology, emotional relationships, and their professional future during the climacteric. This one stands for the biological, social, emotional, and existential "border" between the fertile phase and the next phase, and its consequences impact how one sees themselves and how one plans their life in general. (12)
- One of the stages of life where every woman is challenged to rewrite her identity in terms of future representation by enhancing it with new experiences is the menopausal state. Personal experiences with identity are characterized by flexible behavior, which renders women subject to alterations and changes based on new personal, societal, and environmental demands, as previously hypothesized by Gergen (1979).(13)
- It has been observed that a slightly favorable depiction of potential future changes related to emotional-relational and working activity features has been exhibited, regardless of menopausal and employment status. As a result, menopause is when many women go through the role, responsibility, and relationship adjustments that come with aging. These changes can be extremely stressful for many women and have an impact on their identity, their sense of self, as well as their social and family ties.(12)
- However, as this study's findings indicate, some women might not be significantly affected by these alterations in the future representation of emotional-relational and

work-related components. The upcoming studies may concentrate on the significance of working status features, professional roles, and job happiness.(12)

- Menopause moderates the relationship between actual and future representations and negatively affects both current and future representations. Compared to women who are not yet menopausal, menopausal women are more anxious about future physical changes and have lower expectations about their body image. Nevertheless, a tendency that is positively oriented regarding the future scenario arose despite the dismal assumptions regarding human physiology. Expectations regarding upcoming improvements were positively impacted by both Actual Self and Actual Satisfaction. Additionally, the relationship between the representation of the Actual Self and the Future Self was moderated by menopausal status. (14)
- The findings highlight how a healthy self-image aids in coping with menopause changes. Women must adjust to changes in their responsibilities, roles, and interpersonal connections throughout the menopause phase of their lives. These modifications may hurt their portrayal of themselves going forward. This appeared to be the case, but only for women with negative self-representation. In contrast, for women who had a positive actual self-representation, these alterations might have signaled the start of fresh difficulties for positive psychological development. (14)
- Menopause is a crucial transitional period not just because of the bodily changes it brings about but also because social and psychological changes occur at this time. The findings of this study are consistent with Markus and Ruvolo's (1992) theory that identity characteristics, such as high levels of self-esteem, can be crucial in coping with change and creating optimistic future projections.(15)
Muslim women saw menopause as a moment to fully devote themselves to their religious obligations. These findings point to the necessity of a psychological intervention and education program to help women transition more smoothly during the menopausal stage.(16)
- Menopause is linked to physical and mental changes, which can cause uncertainty and negatively impact menopausal women's lives.(17)

What is the source of information for menopausal women regarding the skin care product?

- A survey found that the dermatologist (41.55%) was the most trustworthy source of information on suggestions for skin-care products. However, purchases at skin care product retailers were also made (27.64%) based on a friend or acquaintance's (40.11%) advice. (9)

What are the effects of cosmetic products used before menopause?

- It is necessary to conduct more research to clarify the connections, windows of vulnerability, and impact of mixes and combinations of items on ovarian health.(18)
- Establishing a strong skincare routine that includes washing, moisturizing, and daily use of sunscreen is crucial in the years preceding menopause. To preserve healthy skin before menopause, look for skincare products that contain antioxidants and other anti-aging chemicals.(19)

Can you prevent skin changes during menopause?

- Menopause is normal and unavoidable for those with ovaries, but that doesn't guarantee they'll love the side effects, including skin changes.
- You may not be able to stop menopause from harming your skin, but you may take precautions at home to maintain your skin's healthiest appearance. Sun exposure is one of the primary causes of skin aging, thus, it's crucial to use Sun Protection Factor (SPF) every day, even when it's cloudy. Use a salicylic acid-based cleanser to combat hormonal acne. This can break down the oil and enter the pores.(20)
- Additionally, hydration is crucial for menopausal skin. Your face and body are likely to feel drier than usual. Using a moisturizer containing hyaluronic acid may help the skin retain moisture.(21) Hyaluronic acid moisturizers work best when applied to damp skin so the component can bind with water. Ceramide-containing moisturizers can stop moisture from evaporating, and using face oil on top of a moisturizer boosts hydration. It's always beneficial to consume hydrating foods, drink lots of water, and attempt to get enough sleep, and use skin care products.(22)

What cosmetic products are used and treatments for skin changes during menopause?

- Taking care of your skin becomes even more crucial as you age. Consider adding a serum or cream with glycerin, topical estriol, or other skin-protecting components to your regular regimen of mild moisturizing treatments. Be sure to drink plenty of water.
- Your doctor might advise hormone replacement treatment (HRT) if the skin changes associated with menopause are particularly bothersome for you and are in conjunction with other symptoms, such as vaginal dryness. In other instances, if HRT doesn't seem the best option, they could suggest a natural HRT substitute like valerian root or dietary adjustment that might help balance hormones.(23)(24)
- BOTOX injections might also lessen the visibility of wrinkles.
- Menopause can cause an increase in facial hair, therefore, laser hair removal might be a viable solution.

What are the cosmetic products used after menopause?

- It is commonly acknowledged that conventional therapies, including local hormone therapy, can reverse the degradation of (estrogen-deficient) aging skin. However, innovative therapeutic drugs that can deliver estrogen's critical skin health signals via selective estrogen receptor modulators (SERMs) instead of estrogen itself have been developed in response to the uncertainty around the effects of long-term systemic menopausal treatment and, more recently, the aversion to systemic hormones.
- The therapy of aging and estrogen-deficient skin currently heavily relies on several plant-derived substances (phytoestrogens) that contain estrogen-agonist SERMs. The targets are the estrogen receptor beta molecules, which are widely distributed in keratinocytes and fibroblasts. Review the variety in effect and the impact of coexisting factors such as racial identity, environmental exposure, and aging. (25)

What is Anti-ageing skin care in menopause?

- Medical research has shown that menopausal hormone therapy (MHT) can lessen and, in some circumstances, even repair skin deterioration in menopausal women. Reintroducing estrogen to menopausal and postmenopausal women boosted their skin's hydration, thickness, and collagen levels, according to numerous clinical trials.(26)(27)

For dull or uneven tones:

- Use AHA (alpha hydroxy acid) or BHA (beta-hydroxy acid) exfoliant to eliminate built-up layers of dead skin to reveal more supple, smooth skin beneath if your complexion appears more dull or uneven in tone.(28)
- After this crucial step, you should use products with substances like vitamin C, azelaic acid, or tranexamic acid that have been shown to brighten and level out skin tone.(29)

To remove wrinkles:

- Consider retinol, an anti-aging super ingredient, if you wish to reduce wrinkles. This component can lessen the visibility of small wrinkles, firmness loss, and other important indicators of aging.(30)

For enlarged pores:

- Use concentrated niacinamide to tighten, smooth, and reduce pores if your skin has developed an orange peel texture due to enlarged pores.(31)
- It is best for active anti-aging ingredients to be suited to a person's skin type, concern, and tolerance.
- Acupuncture stimulates collagen and elastin, which helps to enhance facial suppleness, skin hydration, and the appearance of wrinkles and other aging indicators.(32)

Photo-ageing:

- Chemical Peels of varying strengths, starting with a mild peel or a deeper peel for sun-damaged skin with wrinkles and sun freckles, such as the pH formula Trichloroacetic Acid (TCA) Peel.(33)

Photo-ageing and post-acne scars:

- Dermapen (medical micro-needling) on its own or combined with the Pro Peel or PRP (Platelet Rich Plasma), otherwise known as the 'Vampire Facial'.(34)
- Sun freckles (superficial brown marks) and broken red capillaries on the face and light skin rejuvenation: Intense Pulsed Light (IPL) – this laser-like device uses varying wavelengths to target unsightly red as well as brown marks.(35)

What are the types of cosmetic products used by menopausal women?

- Vitamin C, retinol, ceramide, linoleic acid, and peptides are common skin care ingredients for menopausal skin, which can help to stimulate collagen production.
- By using sunscreen, drinking enough water, controlling estrogen insufficiency, and minimizing UV exposure, women over 40 with high PRS-related collagen metabolism may reduce their risk of wrinkles.(36)

1. Retinol

- It's not too late to start taking retinoids if you didn't earlier in life. Retinols change how old cells behave so they behave more youthfully and regenerate more quickly. However, they can also be dried to the skin at first. If this is your first time using one, start using a retinol-based night cream only twice a week.
- Try to find products that have moisturizing and calming elements like hyaluronic acid, glycerin, and niacinamide. These are especially useful for reducing any dryness and irritation linked to menopausal skin and first-time retinol use.(37)
- Retinol can also lessen the appearance of wrinkles and fine lines during menopause. Topical use of retinol had anti-aging benefits.(38)

2. Phytoestrogens

- The loss of suppleness in the skin of the face and genital area is the main complaint of menopausal patients. Loss of elasticity manifests as lines, wrinkles, and a downward movement that alters the facial contours.
- Phytoestrogens – molecules found in the reproductive part of the plant, the seed or root – mimic the effects of estrogen and help replenish the lost elasticity in the skin of the

face,' says Booth. 'They are safe and natural and, if formulated with potency, can help replace what we lose naturally. (39)(40)

3. Peptides

- Commonly used safe ingredients in cosmetics that increase the hydration of the skin, which reduces wrinkles and enhances the function of the skin barrier, work as natural moisturizing factors that act as water-binding molecules, stimulating the production of collagen and elastin in the skin and improving the surface healing anti-aging effect.(41)
- Collagen production can be boosted by peptides. Peptides can help in minimizing the appearance of fine wrinkles as collagen is one of the fibers that keep the skin looking smooth and plump. Cosmetic goods' bioactive peptides may assist in decreasing wrinkles and fine lines.(42)

4. Hyaluronic Acid

- Depending on the molecular weight of the hyaluronic acid employed, hyaluronic acid has moisturizing properties.
- A variety of plant extracts, vitamins, amino acids, peptides, proteins, saccharides, probiotics, and even gold or malachite extracts are included in the composition of cosmetics that incorporate HA or NaHA. (43)

5. Probiotics

- Proven to be effective at treating and preventing skin diseases like psoriasis, dermatitis, external symptoms of aging, acne, and rosacea. The benefit is that there are no negative side effects.(43)

6. Niacinamide

- A cosmetic component with a solid safety record. Depending on its concentration, it has antipruritic, antibacterial, vasoactive, photoprotective, sebostatic capacity, and lightening impact.(44)(45)

7. Ceramides

- increase skin hydration, enhance barrier function, and reduce inflammation(46)

8. Gold

- lowers indications of stress and aging; has anti-inflammatory and antioxidant effects; tissue regeneration potential.
- Particles bigger than 30 nm can be regarded as safe, although more research on the impact of gold nanoparticles based on their size distribution is necessary for their safe use in cosmetics.(47)

9. Coenzyme Q10

- Observed enhanced skin smoothness, decreased periorbital wrinkle area and total wrinkle score, and enhanced dermis density(48)

10. Folic acid

- Applying folic acid can boost collagen metabolism and increase skin firmness (49)

11. Bakuchiol

- Through their synergistic influence on inflammation and senescence, bakuchiol (BK) and vanilla tahitensis extract (VTE) combination revealed anti-ageing efficacy and may offer a significant benefit in the everyday treatment of naturally aged skin in women.(50)

12. vitamin C

- Long-term usage of a combination of soy isoflavones, lycopene, vitamin C, vitamin E, and fish oil can result in a clinically detectable reduction in the depth of facial wrinkles.(51)(52)

What are the skin dryness serums available for menopausal women?

- A serum can assist in concentrating on problem areas, such as extreme dryness or the elasticity of the skin. Make sure you are knowledgeable about the benefits and active components, so you can select the ideal face serum for your issue.
- A fairly recent study by Draelos et al. found that utilizing a topical serum containing hyaluronic acid could provide skin hydration in 40 females between the ages of 30-65.(53)
- Both in the morning and at night, a moisturizer is essential. A top-notch face cream gives still another layer of vital hydration while sealing in the advantages of any serum used. Just keep in mind to apply more sunscreen during the afternoon since UVA radiation has been related to aging symptoms, including wrinkles and sunspots.(54)

What are the skin-sensitive serums available for menopausal women?

- It's important to choose gentle skin care products, including those free of fragrances, alcohol, and other potential irritants. Look for gentle, fragrance-free skincare products; a mild cleanser will do.
- Avoid using products that contain alcohol or other potential irritants. Vitamin C serum to treat hyperpigmentation also contains hydrating ingredients like glycerin.

What are the day or night creams available for menopausal women?

- Due to its thinner skin, the eye area is the first section of the face to exhibit signs of ageing; consequently, dark circles, eye bags, and puffiness require more care (and skincare) to appear their best. Similar to serums, you can select an eye cream based on your unique concerns. Use hydrations like squalane and glycerin to combat crepey skin, caffeine to reduce puffiness, retinol to treat crow's feet, or vitamin C to brighten the skin.

What are the body skin care creams available for menopausal women?

Menopausal skincare for your body

- When going through menopause, your skin can suffer in other ways as well. As hormone levels fall during menopause, the skin may become dry, saggy, and thin. To replenish moisture in your skin, utilise barrier-strengthening solutions instead of strong perfumes that could upset your skin's pH balance or irritate it.
- Topical estriol facial cream containing estriol, glycerin, vitamin E, and oleic acid.
- This facial moisturizer is medically proven to:(55)(56)
 - Increase collagen production
 - Retain and restore skin moisture
 - Increase skin firmness
 - Decrease pore size
 - Decrease wrinkle depth
 - Increase skin elasticity
- Hot flashes or night sweats and excessive sweating is a common menopause, skincare issues, and probably nothing to be concerned about. This is also a result of fluctuating hormone levels, which have an impact on how the body regulates its temperature.
- You should seek an effective antiperspirant that is also gentle on the skin to reduce excessive perspiration during menopause without irritating the skin. It's crucial to remember that perspiration frequently causes enlarged pores, oily skin, and breakouts.

- It should come as no surprise that as hormones change throughout menopause, acne can get worse.
- It's crucial to keep these specific areas clean if you struggle with acne breakouts throughout menopause.
- You should be cleaning your skin more frequently to attempt to prevent these breakouts because excessive perspiration frequently results in enlarged pores and oily skin.
- To avoid depleting the skin's natural oils and causing further dryness, you must pick a gentle cleanser for this.

In conclusion, women, it is quite a challenging situation for a woman to enter the phase of menopause. Women need to be prepared emotionally, psychologically, and physically to deal with the new changes in their bodies. Support from cosmetics is a boon for this situation.

References:

- Afshari, F., Bahri, N., Sajjadi, M., Mansoorian, M. R., & Tohidinik, H. R. (2020). Menopause uncertainty: the impact of two educational interventions among women during menopausal transition and beyond. *Przegląd Menopauzalny = Menopause Review*, 19(1), 18. <https://doi.org/10.5114/PM.2020.95305>
- Castiglione, C., Licciardello, O., & Rampullo, A. (2015). Possible future changes in menopausal women. *Life Span and Disability*, 18(2), 189–205. <https://doi.org/10.1037/t51447-000>
- Castiglione, C., Licciardello, O., Rampullo, A., & Campione, C. (2014). Representation of Future Changes in Menopausal Women. *Procedia - Social and Behavioral Sciences*, 116, 4993–4997. <https://doi.org/10.1016/j.sbspro.2014.01.1061>
- Chow, E. T., & Mahalingaiah, S. (2016). Cosmetics use and age at menopause: is there a connection? *Fertility and Sterility*, 106(4), 978–990. <https://doi.org/10.1016/J.FERTNSTERT.2016.08.020>
- Fenton, A. (2021). Weight, Shape, and Body Composition Changes at Menopause. *Journal of Mid-Life Health*, 12(3), 187. https://doi.org/10.4103/JMH.JMH_123_21
- Ganceviciene, R., Liakou, A. I., Theodoridis, A., Makrantonaki, E., & Zouboulis, C. C. (2012). Skin anti-aging strategies. *Dermato-Endocrinology*, 4(3), 308. <https://doi.org/10.4161/DERM.22804>
- Gordon, R. A., Crosnoe, R., & Wang, X. (2013). PHYSICAL ATTRACTIVENESS AND THE ACCUMULATION OF SOCIAL AND HUMAN CAPITAL IN ADOLESCENCE AND YOUNG ADULTHOOD: ASSETS AND DISTRACTIONS.

Monographs of the Society for Research in Child Development, 78(6), 1.
<https://doi.org/10.1002/MONO.12060>

- Herman, J., Rost-Roszkowska, M., & Skotnicka-Graca, U. (2013). Skin care during the menopause period: noninvasive procedures of beauty studies. *Advances in Dermatology and Allergology/Postępy Dermatologii i Alergologii*, 30(6), 388.
<https://doi.org/10.5114/PDIA.2013.39430>
- Ishak, N. N. M., Jamani, N. A., Arifin, S. R. M., Hadi, A. A., & Abd Aziz, K. H. (2021). Exploring women's perceptions and experiences of menopause among East Coast Malaysian women. *Malaysian Family Physician : The Official Journal of the Academy of Family Physicians of Malaysia*, 16(1), 84–92. <https://doi.org/10.51866/OA1098>
- Kong, R., Cui, Y., Fisher, G. J., Wang, X., Chen, Y., Schneider, L. M., & Majmudar, G. (2016). A comparative study of the effects of retinol and retinoic acid on histological, molecular, and clinical properties of human skin. *Journal of Cosmetic Dermatology*, 15(1), 49–57. <https://doi.org/10.1111/JOCD.12193>
- Lee, Y. B., Shin, M. K., Kim, J. S., Park, Y. L., Oh, S. H., Kim, D. H., Ahn, J. Y., Lee, S. J., Kim, H. O., Kim, S. S., Lee, H. J., Lee, M. W., Lee, Y. W., & Park, M. Y. (2020). Perceptions and Behavior Regarding Skin Health and Skin Care Products: Analysis of the Questionnaires for the Visitors of Skin Health Expo 2018. *Annals of Dermatology*, 32(5), 375. <https://doi.org/10.5021/AD.2020.32.5.375>
- Lephart, E. D., & Naftolin, F. (2021a). Menopause and the Skin: Old Favorites and New Innovations in Cosmeceuticals for Estrogen-Deficient Skin. *Dermatology and Therapy*, 11(1), 53–69. <https://doi.org/10.1007/s13555-020-00468-7>
- Lephart, E. D., & Naftolin, F. (2021b). Menopause and the Skin: Old Favorites and New Innovations in Cosmeceuticals for Estrogen-Deficient Skin. *Dermatology and Therapy*, 11(1), 53–69. <https://doi.org/10.1007/S13555-020-00468-7/TABLES/3>
- Lobo, R. A. (2019). Menopause and Aging. In *Yen & Jaffe's Reproductive Endocrinology: Physiology, Pathophysiology, and Clinical Management: Eighth Edition* (Eighth Edi). Elsevier Inc. <https://doi.org/10.1016/B978-0-323-47912-7.00014-7>
- Menopause*. (n.d.). Retrieved July 16, 2023, from
<https://www.who.int/news-room/fact-sheets/detail/menopause>
- Palmeira-de-Oliveira, R., Manuel Sousa Lobo, J., Leite Mitterer-Daltoé, M., Martins, V. B., B Parabocz, C. R., & A da Cunha, M. A. (2023). Use of Cosmetic Creams and Perception of Natural and Eco-Friendly Products by Women: The Role of

Sociodemographic Factors. *Cosmetics* 2023, Vol. 10, Page 78, 10(3), 78.
<https://doi.org/10.3390/COSMETICS10030078>

Park, S., Kang, S., & Lee, W. J. (2021). Menopause, Ultraviolet Exposure, and Low Water Intake Potentially Interact with the Genetic Variants Related to Collagen Metabolism Involved in Skin Wrinkle Risk in Middle-Aged Women. *International Journal of Environmental Research and Public Health*, 18(4), 1–12.
<https://doi.org/10.3390/IJERPH18042044>

Pataky, M. W., Young, W. F., & Nair, K. S. (2021). Hormonal and Metabolic Changes of Aging and the Influence of Lifestyle Modifications. *Mayo Clinic Proceedings*, 96(3), 788. <https://doi.org/10.1016/J.MAYOCP.2020.07.033>

Refaei, M., Mardanpour, S., Masoumi, S. Z., & Parsa, P. (2022). Women's experiences in the transition to menopause: a qualitative research. *BMC Women's Health*, 22(1), 1–8.
<https://doi.org/10.1186/s12905-022-01633-0>

Wines, N., & Willsteed, E. (2001). Menopause and the skin. *Australasian Journal of Dermatology*, 42(3), 149–160. <https://doi.org/10.1046/J.1440-0960.2001.00524.X>

Zhao, X., Zhang, X., & Liu, D. (2021). Collagen peptides and the related synthetic peptides: A review on improving skin health. *Journal of Functional Foods*, 86, 104680.
<https://doi.org/10.1016/J.JFF.2021.104680>